



The  
**Imperial Forestry Institute**  
University of Oxford

TWELFTH ANNUAL REPORT

1935—36

AND

PROSPECTUS

Oxford

THE HOLYWELL PRESS, LTD.

1937





The  
**Imperial Forestry Institute**  
University of Oxford

TWELFTH ANNUAL REPORT

1935—36

AND

PROSPECTUS

Oxford

THE HOLYWELL PRESS, LTD.

1937



COMMITTEE FOR THE IMPERIAL FORESTRY  
INSTITUTE.

---

SIR E. FARQUHAR BUZZARD, Bt., K.C.V.O. (*Chairman*).

SIR JAMES IRVINE, C.B.E., F.R.S. (*Vice-Chairman*).

PROFESSOR R. S. TROUP, C.M.G., C.I.E., F.R.S.

MR. C. G. T. MORISON, Student of Christ Church.

MAJOR R. D. FURSE, C.M.G., D.S.O., Colonial Office.

MR. A. D. BLASCHECK, India Office.

SIR ALEXANDER RODGER, O.B.E., Forestry Commission.

PROFESSOR A. W. BORTHWICK, O.B.E., F.R.S.E., University  
of Aberdeen.

MR. J. N. OLIPHANT (*Secretary*).

# UNIVERSITY OF OXFORD.

---

## TWELFTH ANNUAL REPORT OF THE IMPERIAL FORESTRY INSTITUTE.

ACADEMIC YEAR, 1935—36.

---

### INTRODUCTION.

As explained in last year's Report, the arrangement whereby the University Professor of Forestry had been *ex officio* Director of the Institute was terminated by the appointment, as from January 1st, 1936, of a separate Director charged with immediate responsibility for carrying out the policy laid down from time to time by the Committee for the Institute with the concurrence of the Committee for Forestry, whose concern is with the activities of the University Department of Forestry as a whole. The broad objective in view was the development of the work of the Institute to meet more effectively and on a wider basis the needs of the various forest services of the Empire, and the period of the year remaining after the new arrangement had taken effect was occupied very largely by the consideration of plans for attaining this objective. It would have been inadvisable to attempt any material changes in organization during the progress of an academic year, and the work of the Institute proceeded throughout the year on much the same lines as it had followed previously.

2. The Committee for the Institute considers it desirable, however, that the opportunity afforded by the publication of this annual report should be utilized to explain the nature of the developments that are being planned, and the first part of the report will accordingly be concerned with this theme. A Special Committee was set up to consider future policy, and the outline given below is in the nature of a summarized account of the more important conclusions embodied in their report, which has received the approval of both the Committee for the Institute and the Committee for Forestry.

## PART I.

### FUTURE POLICY.

3. The dominant idea that emerged from the discussions of the Special Committee was the conception of the Institute as a centre for the study of *world* forestry in relation to Empire forest problems. They concluded that this was undoubtedly the direction in which the territories contributing to the support of the Institute wished it developed, and thought it advisable to lay down explicitly that the study of European forestry was desired rather as a part of world forestry, and for such bearing as it might have on Empire forestry, than as an end in itself. Forestry in the Empire generally is at a much earlier stage of development than the forestry of mid-western Europe, which is the product of centuries of evolution; and while European forestry will always remain a fruitful field for the study of broad principles, its *minutiae*, particularly in the field of forest management, are often of very limited significance in relation to the practical problems of other continents. Facilities for their study should be available, but should be provided *ad hoc* to meet the requirements of advanced students instead of being superimposed on primary training; which, relieved of this overburden, can be concentrated with greater effect on the fundamental sciences, biological and economic, that form the basis of scientific forestry.

4. Considering present limitations in respect of finance and personnel, the suggestion that the Institute's activities should comprehend the study of forest conditions and forestry practice in all parts of the world is a decidedly ambitious one; but it is all to the good that so high an aim should be set up. With a narrower objective the Institute would lose much of its appeal to overseas territories, whereas it does actually offer unique facilities, which should be capable of considerable enlargement at relatively small cost, for focussing the experience of all parts of the Empire through the medium of the constant stream of forest officers and research personnel who visit it to undergo 'refresher' courses or merely to maintain contact. An enormous fund of practical knowledge is here available, if means can be devised of drawing upon it systematically and placing the results on record; and the principle approved by the Committee of the evolution of the Institute 'rather as a forum for the interchange of professional knowledge among foresters from all parts of the Empire than as a place of instruction *ex cathedra*' appears a sound and realizable one. It is stimulating to the more senior officers who come for study to feel that they are there not only



to learn but to teach, and there was general agreement that the development of this idea would greatly enhance the Institute's usefulness and efficiency.

5. It is perhaps not generally understood how continually the applications of forestry are undergoing extension. Civilized communities have been brought by painful experience to a realization of the effects of forest destruction in causing deterioration of climate, soil and amenities; and the menace of climatic deterioration to important plantation industries, such as cocoa cultivation in West Africa, is becoming obvious at least to scientific observers. The possibilities of the controlled use of vegetation as an instrument for the reclamation of degraded land are increasingly the subject of experiment; and the greater efficiency and lowering of costs attainable by the application of forestry principles to the cultivation of economic tree crops like rubber, wattle and cloves have been appreciated for some time past. Great advances are being made in the technique of use (utilization) and the technique of replacement (silviculture) in their application to the primaeval and hitherto little exploited forests of the tropics. Modern forestry is concerned with an infinity of techniques, to a large extent developed empirically; and it should be an important, perhaps the most important, function of the Institute to study and analyse such techniques, and the reasons for their success or failure, in terms of the fundamental sciences applied in them. Silviculture, for example, is regarded nowadays not as a single subject, but as a compound study combining applications of plant physiology, soil science, ecology, systematic botany and to some extent other sciences such as zoology; and increasing stress must be laid on the need for co-operative or 'team' research for the solution of its exceedingly complex problems.

6. It is considered axiomatic that the instruction given at the Institute should be based on research of this character carried on by the staff, but in so far as field work is concerned such research must of necessity be limited to the study of the problems of temperate forestry. As the fundamental principles involved are similar everywhere this is less of a handicap than it might at first sight appear, but it is important in the circumstances that the outlook of the staff should be broadened by the provision of better opportunities of establishing contact with research on analogous problems carried on by other workers overseas; and facilities enabling them to travel are regarded as one of the most urgent needs of the Institute. It will be part of the functions of the permanent staff to act as 'rapporteurs' and recorders of the experience brought to the Institute by visiting officers, but they can hardly be expected to fill this rôle effectively without some first-hand knowledge of forest conditions in

the Empire at large. It is hoped that it may ultimately be feasible to arrange for tours of some length, during which the duties of the member of the staff on tour will be carried out by a *locum tenens* from some other part of the Empire; and meanwhile, as a beginning, financial aid has been secured wherewith a senior member of the staff is to visit North and Central America, Australia, Malaya, India and Ceylon on a tour of some seven months' duration in the summer of 1937.

7. The secondment of officers from Empire territories to give instruction at the Institute for more protracted periods is recognized as an arrangement ultimately desirable, though financial limitations preclude its being given immediate effect. Meanwhile it is thought that the same purpose can be served to a large extent by the expedient already mentioned of engaging forest officers who have occasion to visit the United Kingdom on leave or otherwise to give Institute students the benefit of their experience by means of short lecture courses. Inasmuch as this arrangement will provide an inflow of knowledge covering a wider range of conditions, it is probable that it will be worth continuing independently of any action that may be taken at a later stage towards securing the services of seconded officers for instructional work. The system was initiated in the Trinity Term of 1936 with lectures given by officers from the Gold Coast, Nyasaland and British Guiana, and it is hoped considerably to enlarge the scope of such lectures in the academic year now current. The lectures deal either with general forestry conditions and practice in the territory in which the officer is serving, or with some subject of which he has made a special study. Fees are paid, and the substance of the lectures is reduced to writing for permanent record. An epidiascope, purchased with the aid of a grant from the Schlich Memorial Fund, enables the lectures to be freely illustrated by photographs and diagrams.

8. This system, together with travel facilities for the staff in so far as it may be possible to provide them, should help very materially towards securing that closer contact and co-operation with the personnel of overseas departments for which a general desire has been expressed; and every opportunity will be sought of establishing such contact in other ways. For example, it has been arranged, with the approval of the Colonial Office, to hold each summer an informal meeting of officers of the Colonial Forest Service on leave in the United Kingdom to discuss forestry problems pertaining to their territories, and the first of these meetings was held in June, 1936. Recent experience suggests that a similar procedure could usefully be employed in cases where an officer from overseas engaged on work of a specialized character wishes to consult the staff of the Institute and any other scientific authorities whose advice may be readily



obtainable. At an informal conference held in November, 1936, to discuss a Colonial problem of some magnitude, the experience of members of the staff of the Institute and of other University Departments was reinforced by that of representatives of South Africa, Australia and two Colonies, other than the one on whose behalf the issues had been raised, who happened to be in the United Kingdom at the time.

9. The value of this function of the Institute in facilitating diffusion of experience by personal contact can hardly be overstressed. It implies not merely a 'two-way' exchange of knowledge between the permanent staff of the Institute and officers of experience from overseas who come to study at or to consult it, but an 'all-way' exchange between the students themselves. It is largely with this advantage in mind that the Special Committee have suggested for the consideration of the Colonial Office that the fourth year of training of probationers for the Colonial Forest Service should be deferred until after an 'apprentice tour,' averaging about two years in duration, in the Colonies to which selected candidates are assigned. Reassembled after such a tour, the practical experience acquired by these men, albeit limited, would enable them to appreciate the nature of the scientific and technical problems that they were called upon to attack far more clearly than could be expected of any student without experience of tropical conditions; and they would be in a position to concentrate on those problems, comparing notes with their colleagues from other territories, and referring difficulties to the Institute staff and to more experienced officers undergoing refresher courses. The change outlined would incidentally go far to remove the criticism of the Institute that it has been allowed to become too much like a forest school dominated by the requirements of the Colonial Forest Service probationers. The suggestions put forward by the Special Committee in this connection are under consideration by the Colonial Office, but, in view of the need for consultation with Colonial Governments, an immediate decision cannot be expected.

10. Turning from the question of the dissemination of knowledge by personal contact we come to the problem of its dissemination through the medium of scientific and technical literature. There is general agreement that the Institute should act as a clearing house for information on world forestry available in documentary form. The sole obstacle to development in this direction has been lack of the finance requisite for the sifting over of the huge volume of professional literature, and the presentation to Empire forest organizations of its more important and valuable contents in assimilable form by means of abstracts, 'composite' reviews, translations from foreign literature, microphotographic copies of documents, and so on. As

from the beginning of 1936, the practice of scanning all incoming literature and indexing important contributions was resumed in a modified form, involving the use of the new 'Flury' international decimal classification and the issue, in multigraphed form, of a 'Current Monthly Record.' The latter serves the dual purpose of keeping oversea departments abreast of current literature and providing the basis of a permanent card index. But under present financial limitations this is as far as we have been able to go towards meeting the general demand for a 'bureau' service, and the immediate prospects of securing adequate funds through the channels whereby the Institute has hitherto been financed cannot be regarded as hopeful.

11. In August, 1936, however, we were informed that the British Commonwealth Scientific Conference, about to assemble in London, had under consideration a proposal, understood to have originated from overseas, that a forestry bureau should be set up under the Imperial Agricultural Bureaux scheme; and it was arranged that the delegates should visit the Institute on October 1st, and examine its facilities with a view to the possibility that the bureau might be attached to it. The Conference subsequently recommended to the Governments adherent to the scheme that a bureau should be set up. This idea of a separate organization, attached to the Institute though not integral with it, is an entirely new one, but, if the Governments concerned see fit to accept the recommendation, and if it is considered desirable, and is acceptable to the University, that the bureau should be located at Oxford, it would appear to the advantage of the Departments contributing to the support of the Institute that it should fall in with the scheme. Their interests would be sufficiently safeguarded by the fact that, while the suggested bureau would be under the control of the executive organization of the I.A.B. Scheme, the head of the institution to which it was attached would, under the provisions of that scheme, be *ex officio* head of the bureau. As the position appears to have been misapprehended in certain quarters, it is desirable to point out that no definite proposal in the above sense has yet been made to the Institute or to the University, nor have any steps been taken to give effect to the scheme.

12. The Special Committee devoted considerable time to the examination of the range of subjects to be provided for in the curriculum of the Institute, and the relative weight to be attached to each, and were materially aided in this task by the replies to a questionnaire on the subject addressed to forest departments and organizations overseas. As was to be expected, very wide divergencies of opinion on this question were disclosed, but, while it proved impossible to arrive at any satisfactory analysis of the results in terms of relative values for the several subjects,

the enquiry had a very definite value as indicating trends of opinion on the broad lines on which instructional work should develop. The general view appears to be that there is a call for more teaching of economics, as the basis of forest utilization and management, and of ecology, plant physiology and soil science as fundamental to the study of silviculture.

13. In so far as economics are concerned, opinion is not very articulate as to the type of instruction required, but it may be surmised that the real demand is for the inculcation of such knowledge of the general economics of supply and demand, production, transport, marketing and trade, as will enable intelligent and constructive criticism to be applied to development projects, large and small, on which forest departments are required to advise their Governments. Much money has been wasted in the past, by both Governments and private concerns, owing to failure to appreciate the economic factors involved in such schemes; and the need for an economic check on trends in silviculture, for example the tendency to attach importance to fast growth in timber at the expense of quality, was a point on which considerable stress was laid at the recent Empire Forestry Conference. The advanced economics of timber-growing are a subject that is not likely to be in general demand by Empire territories until much more data are available on actual growing costs throughout the life of forest crops than there has yet been time to accumulate. The need for instruction in statistical method, however, is recognized, and provision is being made for this study.

14. The possibilities of development and improvement of instruction in the directions indicated are limited by present financial circumstances, in which no immediate addition to the permanent staff of the Institute can be contemplated. Nevertheless the Special Committee were agreed that much could be done towards meeting the requirements of the contributing territories by the adaptation and fuller use of existing resources and personnel. Economics are somewhat of a difficulty, but the Director is in a position to contribute to the instruction given in this subject on the basis of his twenty-five years of experience in India and the Colonies of economic problems bearing on forestry, and it is hoped that visiting lecturers will bring further material for study.

15. As regards the biological subjects mentioned, the Botanical Section of the Institute has now put in sufficient spadework on basic studies in the field of systematic botany to enable more attention to be devoted to ecological work, and valuable aid in the latter study is being rendered by Professor Tansley of the University School of Botany. As a further development, Mr.



W. R. Day, in charge of the Pathological Section, is to give a course of instruction in the complex problems of plant physiology, ecology, soil science and systematy (as bearing on 'race' problems), which it has been decided tentatively to group under the designation 'forest hygiene'; and will illustrate it by studies in the field of problems arising in connection with the research work that he is conducting for the Forestry Commission. Finally, arrangements have been made for special instruction at the Soil Science Laboratory, which is in close proximity to the Institute and has excellent facilities for dealing with soil problems from the forestry standpoint. Its Soil Museum contains the largest collection of monoliths of tropical soils in the world, and the instruction given covers recent advances in field technique for the description and investigation of soils: the nature and properties of humus, its conservation or degradation by various systems of utilization; and soil erosion and its associated problems. It is contemplated that these three agencies should collaborate in research on the group of subjects with which they are severally concerned, including field work on actual research projects with which Mr. Day and other members of the Institute staff are occupied; and that on the basis of such 'team' research a system of 'team' instruction should be built up. For such instruction the colloquium method, applied both in the lecture room and in the field and supplemented by suitable reading, is considered preferable to the delivery of 'set' lectures.

16. The directions in which it is envisaged that the research and instructional activities of the Institute should develop, within the limits imposed by considerations of finance and personnel, may be briefly outlined. On the cultivation side, which, it should be emphasized, is not restricted to productive forestry but embraces the steadily widening field of study of the protective and reclamative influences of vegetation, the important fundamentals are *soil science*, *ecology*, *systematic botany* and *plant physiology*. *Forest zoology* has also some direct bearing on cultivation problems, though its chief application, and that of *plant pathology*, is in evolving remedial measures against the diseases and pests that form a particular menace to forest crops grown by artificial, as distinct from natural, methods. The study of *wood structure and properties* in conjunction with plant physiology provides a necessary link between silviculture and wood utilization, besides being fundamental to the latter. Research in utilization is outside the scope of the Institute's functions, but instruction in this subject is necessary for the attainment of a comprehensive view of forestry in general; and a knowledge of *engineering* is necessary for the application of most methods of utilization. The study of *economics* is fundamental to every branch of forestry, and in particular to *forest management*.

17. The remaining point of importance has to do with study tours. It was regarded as important by the Special Committee that there should be some departure from the somewhat stereotyped tours in France, Germany and Switzerland hitherto arranged for Colonial probationers and officers undergoing refresher courses, of which there have been many criticisms to the effect that the highly specialized forms of forestry seen have little application to average conditions overseas. For purposes of general instruction it is believed that the admittedly less advanced but steadily developing forestry practice of the northern European countries would offer a useful extension of existing fields of study; and it has been arranged that the Institute summer tour in 1937 should take place in Finland. The forest industry in Finland is of special interest from the economic standpoint, and as illustrating the development of a balanced relation between forestry and agriculture; and it is contemplated that such tours should ordinarily be accompanied by two members of the staff, one dealing with the economic and the other with the biological aspects of the forestry seen, thus ensuring that the instruction given is as broad as possible and free from personal bias towards specialized lines of study.

18. It is also proposed to arrange, as a normal feature of Institute courses, short tours in the United Kingdom to study the operations of the Forestry Commission. These departures will involve no change in the existing procedure whereby special tours are arranged for individual students desirous of studying particular aspects of forestry; in fact it is recognized as most desirable that such facilities should be extended to the nearer parts of the tropics and, on occasion, to North America. To mention a case in point, it has been arranged that two Colonial officers, deputed by the Palestine and Nyasaland Governments to undergo refresher courses at the Institute, should make short tours in the United States, with the aid of travel grants from the Carnegie Corporation of New York, to study the latest methods evolved by the United States Soil Conservation Service for the prevention of erosion and desiccation; and the officer from Palestine has been pursuing the same line of study in the course of a recent tour in Nigeria, whence he returned across the Sahara in order to see some of the work of the Algerian Forest Service.

19. Pending decisions on the important issues raised with regard to the method of training recruits for the Colonial Forest Service, and the proposed setting up of a forestry bureau, it was deemed inadvisable to proceed further in the matter of the projected new building for the Institute, despite the inconvenience and loss of efficiency resulting from the inadequacy of the present accommodation.

20. In view of the amount of space that it has been necessary to devote to the above account of the Institute's plans for the future, it is proposed to deal only very briefly with the work accomplished during the year under report.

### SUMMARY OF PART ONE.

From the preceding paragraphs it will be seen that the aim is to develop the Institute as a centre for the study of world forestry in relation to Empire forest problems, and as a forum for the interchange of professional knowledge amongst foresters from all parts of the Empire, rather than as a place of instruction *ex cathedra*. With this object in view, it is proposed to take every opportunity for maintaining a closer liaison with the Services concerned; for widening the facilities for study, both in respect of initial training and refresher courses; and for developing a comprehensive service of information.

Limited financial resources are an obstacle to rapid progress in any of these directions, but it has already been possible to arrange for one senior member of the Institute staff to undertake an extensive tour abroad in 1937; and bearing in mind the desirability of attaching to the staff officers seconded from overseas Forest Departments as soon as circumstances permit, officers on leave in this country are meanwhile being invited to give short courses of lectures at the Institute. Grants have also been obtained to enable two officers sent to the Institute for refresher courses to visit the United States of America in order to study, at first hand, the measures taken there to combat erosion and desiccation; and facilities for the study of continental forestry are being extended.

A Documentation Section has been set up to examine and index incoming forestry literature, information regarding which is compiled for circulation in a *Current Monthly Record*; and further developments may result from proposals put forward at the recent British Commonwealth Scientific Conference for the establishment of an Empire Forestry Bureau.



## PART II.

## ATTENDANCE.

21. The number of students attending courses of study for the whole year or for shorter periods was eighteen. These may be classified as follows:—

## POST-GRADUATE PROBATIONERS.

		<i>Total</i> 1935-36	<i>Average of</i> previous 5 years
Colonies :	Gold Coast ...	1	
	Malaya ...	1	
	Nigeria ...	5	
	Nyasaland ...	1	
	—	8	8

## FOREST OFFICERS ON LEAVE.

Colonies :	B. Guiana ...	1	
	Cyprus ...	1	
	Gold Coast ...	1	
	Malaya ...	1	
	Nigeria ...	1	
	Nyasaland ...	1	
	Tanganyika ...	1	
	—	7	7
India :	Burma ...	1	
	Forest Research Institute, Dehra Dun	1	
	—	2	3.5

## PRIVATE STUDENTS.

—	1	2.5
—	18	21
—	—	—

## DIPLOMA IN FORESTRY.

22. One student, Mr. F. D. Ross, St. Catherine's Society, satisfied the examiners and was awarded the Diploma of Forestry, the subject of his thesis being: 'A study of pits between vessels and parenchyma in Dicotyledons.'

## BOTANY SECTION.

23. The case for alteration of the International Rules of Botanical Nomenclature in order to secure greater stability in the names of trees of economic importance was presented by Dr. Burt Davy to the Sixth International Botanical Congress held at Amsterdam in September, 1935, which he attended as a

delegate representing the Institute and the Indian Forest Service. As a result he was appointed a member of an *ad hoc* international committee to consider lists of tree species which it is desired to stabilize, and was asked to collect and present such lists put forward by forest departments and other institutions in the British Empire having an interest in the matter. So far 21 lists, comprising 2,156 names, have been submitted: the Committee are at work on them, but have not yet been able to report. They are endeavouring to secure international agreement where two or more names in use for the same species are a cause of difference of opinion. As the members of the Committee are widely scattered, the work has to be carried on by correspondence, and considering that they have also their regular institutional duties to attend to, it is inevitable that it should take time; nevertheless, we feel that definite progress is being made, and hope that the Departments concerned will bear as patiently as they can with the delays which are unavoidable in clearing up so vexed a question.

24. The completion of the report on the Institute Expedition to South Central Tropical Africa in 1929 has been delayed owing to the time necessary for identifying the 2,800 specimens collected. This work had to be intercalated between routine identifications for the Colonies. Many of the trees lacked flowers or fruits at the season of the year at which the tour was made, and this rendered the task of naming them more difficult. Identification was practically completed during the year under report, and it is hoped that the project will be successfully brought to a conclusion during the winter of 1936-37. Mr. Dunkley was responsible for the greater part of the identifications, Mr. Hoyle undertaking the genus *Brachystegia*, Dr. Exell of the British Museum the *Combretaceae*, Dr. Bancroft the *Monotoideae*, and Dr. Burtt Davy dealing personally with many critical species in various groups.

25. Revision of the genus *Brachystegia* is of importance from the standpoint of Tanganyika, Nyasaland and the Rhodesias in connection not only with timber supply, but also with tse-tse fly work, agriculture, stock-raising and erosion—all matters vital to the welfare of the population; and, in the absence of other agencies willing to undertake this work, the Botany Section has been obliged to proceed with it on behalf of the forest departments concerned. Mr. Hoyle has devoted considerable time to it, but much remains to be done.

26. The Nyasaland check-list was well advanced by the end of the year under report and has since been published. A check-list for Tanganyika is also well under way, and it is hoped to issue a first list for the Gold Coast during 1937.

27. The final work in connection with the publication of *Forestry Commission Bulletin* No. 17 on the Cricket-bat Willow was concluded towards the end of the year and the Bulletin appeared shortly afterwards. During the investigation certain additional data were assembled which were considered too technical for inclusion in a popular bulletin, and it is hoped, when time is available, to digest these for publication as an Institute paper.

28. A preliminary reconnaissance was made by Dr. Burt Davy in the New Forest and at Chiddingfold in West Sussex to study certain difficulties that the Forestry Commission were experiencing with the growing of Oak in these areas. An interesting and apparently very complex problem, involving soil and vegetation factors, and the factor of the races of Oak grown, was disclosed, and it is hoped that there may be opportunities of investigating this in greater detail with the collaboration of the Soil Science Laboratory. The results of the preliminary study have been outlined in an article in the *Empire Forestry Journal* for December, 1936.

29. Dr. Helen Bancroft and Miss Dickson continued their voluntary researches on the structure of fossil and pre-historic woods, and the structure and general systematic anatomy of the *Monotoideae* and of the genus *Ulmus*. The nomenclature of the Elms is in great confusion, so that it is at present impossible to authenticate the timbers, and to pronounce with certainty upon the more valuable types from the utilization point of view; but considerable progress has been made towards an understanding of the taxonomy of the genus. While the Institute provides laboratory accommodation for this research work, it is not otherwise a charge upon Institute funds.

30. As from the beginning of 1936, *Dendrological Notes*, containing current information about important timber trees, additions to local forest floras and check-lists, corrections in nomenclature, etc., have been compiled and issued quarterly to Empire forest departments as a supplement to the *Current Monthly Record* of incoming literature.

31. A vigorous effort was made during the year to reduce over-crowding in the Herbarium by the distribution of duplicate material, and 10,748 sheets were thus disposed of. Identifications during the year numbered 2,560, of which 401 were for the Forest Products Research Laboratory. Lists of donations to the Institute herbarium, and of exchanges of material, together with summaries of the identifications made during the year will be found in the Appendices to this report. The specimens received totalled 4,849, and the herbarium now contains 57,572 sheets.



32. Eight men took the probationers' course, as compared with four in 1934-35; and seven officers on leave took refresher courses, involving longer or shorter periods of study, as compared with three in the previous year. Senior students in the second of these two categories require much individual attention, and the interruptions occasioned by the exigencies of teaching are apt to bring major research projects requiring sustained attention to a standstill during term time; but such delays are unavoidable.

33. Acknowledgments are due for valuable assistance rendered by the Sherardian Professor of Botany, Oxford, and his Staff; the Director and Staff of the Royal Botanic Gardens, Kew; and the Keeper of Botany and Staff of the Botanical Department, British Museum, Natural History, South Kensington.

34. The Section is also indebted to Mrs. A. B. Gillett, Oxford, for the loan of the services of her Secretary, Miss Livesey, to help in the labelling and despatch of the duplicate herbarium material referred to above; to Mr. C. Vigne, of the Gold Coast, and Mr. A. L. Bolton, of Berkeley, California, for the contribution of photographs; to Mr. I. A. Beveridge, of the Gold Coast, for valuable criticism of the text of the draft Gold Coast Check-List; and to Mr. A. Bruce Jackson, of Kew, for 77 printed descriptions of cultivated conifers, which will be very helpful in making determinations.

#### WOOD STRUCTURE SECTION.

35. Dr. L. Chalk remained in charge of this section, with Miss M. M. Chattaway as his assistant. Eight probationers and one private student underwent courses of instruction.

36. Research has been directed mainly towards the technique of describing and identifying woods. For this purpose the classification and indexing of anatomical characters throughout the Dicotyledons, which has been in progress for some years, received special attention. Analysis of the data so far collected has been begun, with a view to assessing the relative values of certain characters for purposes of identification, and to elucidate their bearing on general problems of taxonomic classification. Miss Chattaway completed her research on the *Sterculiaceae*, sub-family *Sterculiæ*.

37. Work was continued on the use of measurements, in collaboration with the International Association of Wood Anatomists. A paper was prepared and published after the close of the year on the use of descriptive terms for the lengths of fibres and vessel members, based on the study of their distributions throughout the Dicotyledons.

38. The number of identifications made was about the same as last year, namely 110 specimens. Six hundred woods were added to the wood collection, which now totals 11,283. A list of accessions to the collection is given in Appendix V.

### FOREST PATHOLOGY SECTION.

35. Mr. Day remained in charge of the section, assisted by Mr. T. R. Peace, who was engaged exclusively on work for the Forestry Commission.

36. Research to determine, by means of a technique involving artificial refrigeration, the influence of accessory factors on the degree of injury caused by frost was brought to a conclusion, and it remains for the data assembled to be analysed and written up. The results will appear as a series of papers in the periodical *Forestry*. An attempt is now being made, using a similar technique, to discover differences in the effects of freezing on European Larch and Scots Pine of varying provenance. This project follows the same lines as research already carried out in Sweden, and is an endeavour to separate different races of the species in question by their response. Preliminary experiments have shown that the refrigerator can be used for the investigation of the phenomenon of frost-lift, and further work on this problem is being carried out.

37. An enquiry into the effect of the widespread and devastating frosts of mid-May, 1935, was undertaken in co-operation with the Forestry Commission, and with the aid of a grant from the Schlich Memorial Fund; and the results will appear during 1937 in the form of a Forestry Commission Bulletin on Spring Frosts.

38. Elm disease was studied by Mr. Peace in Holland in the summer of 1935, and the usual annual survey was made of the occurrence of the disease in Britain. Mr. Parker and Dr. Walter, deputed by the United States Department of Agriculture to study the disease, have been given all facilities possible and Mr. Peace has co-operated with them in field-work.

39. Ink disease was not made the subject of any field studies during the year owing to the pressure of other work, and the fact that only one enquiry was received on this disease suggests that it is not extending on a serious scale. The enquiry referred to a case of infection of common Sweet Chestnut with *Phytophthora syringae*; the first instance of the isolation of this species in natural occurrence in Britain. Inoculation of Japanese Chestnuts grown from seed obtained from France showed them to be susceptible, though not to the same extent as in the experiments of the previous year. Trees for inoculation are to be grown to a larger size to see if they are then more resistant.

40. Inoculation experiments with Larch Canker Fungus (*Dasyscypha calycina*) gave negative results, and have been suspended. Work on *Meria laricis* is now finished, and this fungus will be removed from the research programme. There has been no time for further work on Poplar Canker, but data collected in Northern France, Belgium and Holland in the summer of 1935 provide further evidence that susceptibility is largely a matter of varietal resistance, and that the disease can be avoided by planting the more resistant types.

41. In the case of *Melampsoridium betulinum*, a fungus troublesome on Birch seedlings in nurseries, evidence was obtained confirming the view that the presence of Larch in the vicinity is necessary for the infection of the Birch, though the presence of fructifications on the Larch trees supposedly responsible for the infection has still to be established.

42. Considerable field work on Butt Rot of conifers has been carried out by Mr. Peace in plantations undergoing felling and thinning, and this work will be concluded during 1936-37. Of a number of species of fungi responsible, *Fomes annosus* has proved by far the most important. Acknowledgment is due to Mr. K. St. G. Cartwright, of the Forest Products Research Laboratory, Princes Risborough, for valuable assistance in the identification of fungi isolated in the work on Butt Rot.

43. In connection with the transfer to duties elsewhere of Mr. J. Macdonald, of the Forestry Commission, a new arrangement was initiated, in the first instance for an experimental period of one year, whereby Mr. Day assists in the silvicultural research of the Forestry Commission. As a result of this, two projects have been taken up by Mr. Day in collaboration with Mr. Macdonald's successor, Mr. R. G. Sanzen Baker. The first is an investigation of the Commission's Poplar plantations to provide material which will serve as a guide in framing future policy with regard to the growing of Poplar. The second is an investigation of certain areas in South Wales in which difficulties have been experienced in getting certain species to grow satisfactorily. European Larch and green Douglas Fir are the two species mainly affected, and considerable study is likely to be required for the determination of the factors inimical to their growth.

44. It has been arranged that, in 1936-37, Mr. Day will lecture on Forest Hygiene and also on the statistical aspects of forest experimental work, the former series of lectures being a new departure, while instruction in the latter subject has been given hitherto by Mr. Macdonald. The work of the section involved a considerable volume of advisory work, and 53 enquiries were dealt with during the year.



## FOREST ZOOLOGY SECTION.

45. Dr. R. N. Chrystal remained in charge of the section, with Mr. J. B. B. Brown as Assistant Entomologist engaged in research work on behalf of the Forestry Commission. Dr. Chrystal delivered a course of eight lectures on Forest Entomology to the Colonial probationers, and also gave four lectures with demonstrations, covering the syllabus of the Surveyors' Institute examinations, at the School of Rural Economy. Two lectures were given as usual to the students of the Foresters' School, Parkend, Forest of Dean.

46. Research work was concentrated on the Pine-Shoot Beetle (*Myelophilus piniperda*), the Pine Weevil (*Hylobius abietis*) and Chafer Beetles (*Melolontha*, *Rhizotrogus* and *Phyllopertha*). The Pine Weevil was studied only in the New Forest: the Pine-Shoot Beetle in the New Forest and in East Anglia. In the New Forest much evidence was collected regarding the populations of beetles in unthinned woods and the facilities for breeding present in such localities; and the various agencies responsible for damage to the crowns of the trees were also studied. Further experiments were made with the object of discovering a suitable chemical for treating logs as a preventive against beetle attack.

47. Work on the Pine-Shoot Beetle in East Anglia was directed towards ascertaining what influence, if any, the beetle has in young woods fifteen to sixteen years of age, and what relation there may be between its incidence and the time and method of disposing of thinnings in young Pine plantations. The latter study was carried out under a scheme laid down by Mr. W. H. Guillebaud of the Forestry Commission. The work on the Pine Weevil in the New Forest consisted of trapping experiments carried out under various conditions. Experiments were initiated to determine the efficiency of trapping before fellings are commenced.

48. Experiments on Chafer Beetles were continued at Delamere nursery, under the direction of Mr. J. M. B. Brown, and were concerned with the use of soil insecticides manufactured by Imperial Chemical Industries for the destruction of the young larvae of the chafer *Phyllopertha*. The value of deterrent agents against the adults during egg-laying periods was also the subject of tests. An experiment was laid down in the New Forest to test the value of gas lime for cleaning chafer-infested ground.

49. The number of enquiries dealt with during the year was 46, and there was an increase in the number of personal visits to the Section by enquirers desirous of obtaining advice. One of the most interesting enquiries related to the attack of a bark

beetle, identified as *Polygraphus polygraphus* L., on Spruce in Suffolk, this species not having been recorded previously as breeding in this country. It is hoped in due course to publish the results of this investigation.

## SILVICULTURE AND FOREST MANAGEMENT.

50. A course of lectures in tropical silviculture was given by Professor Troup in the Trinity Term. Mr. Bourne lectured to the Colonial probationers on stock-taking and yield regulation, also on regional and air survey methods as applied to the survey of soil and vegetation; and these methods were the subject of demonstration in the field. A working plan tour was made in the Cotswolds, and the summer tour included visits to the Vosges, the French and Swiss Jura, and the Black Forest.

51. Six forest officers studied stock-taking problems relating to their respective territories, and one received special instruction in the interpretation of air photographs.

52. Regional soil surveys were continued in the London and Hampshire Basins, and a similar reconnaissance was carried out in north-east Scotland in association with the staff of the Macaulay Institute of Soil Research.

53. Mr. Bourne read a paper before the British Association, 1936, on the Beechwood Associations of Southern England. He also gave evidence before the Agricultural Research Council Sub-Committee on Soil Surveys and arranged an excursion and demonstration for the Soils Correlation Committee of the Ministry of Agriculture.

54. The arrangement whereby the Forestry Commission's Research Officer for England and Wales has his headquarters at the Institute continued during the year under report. Towards the end of the year the incumbent of this post, Mr. J. Macdonald, was transferred on promotion to a divisional charge and succeeded by Mr. R. G. Sanzen-Baker, who had come to Oxford in December, 1935, as Mr. Macdonald's assistant. The loss to the Institute of Mr. Macdonald's services and personality is severely felt. By a special arrangement with the Forestry Commission he had been delivering annual courses of lectures to the Colonial probationers on Experimental and Statistical Methods as applied to Silviculture, and the last of these courses was given in the Trinity Term. This subject has now been taken over by Mr. Day.

55. The nursery at Kennington continued to be used for research and instructional work on the raising of plants, and facilities were afforded to Dr. Burt Davy in his work on

Willows, and to Messrs. Day and Peace in their mycological work and studies of frost lift. The Research Officer also collaborated with Mr. Day in investigations on the growing of Poplars and the problem of alleged damage to plantations by industrial fumes.

### FOREST ENGINEERING AND UTILIZATION.

56. All the Colonial probationers, and one officer attending a refresher course, attended a course of lectures by Mr. Lloyd, who continued in charge of the section, on road alignment and construction, and carried out a complete road project in the field. The probationers were also given practical instruction with the R.E. Section, O.U.O.T.C., in timber construction, bridge erection, pile-driving and wire-rope-way construction.

57. Several lectures were given on sawmilling, and types of saws and sawmill plant and machinery were studied at local sawmills. Practical demonstrations were arranged of tree felling by winch, power-saw felling and the uprooting of trees and stumps by the use of explosives. Visits were paid to the various sections of the Forest Products Research Laboratory at Princes Risborough.

58. The collection of material for a general text-book on forest engineering continues, but publication must await further first-hand study of technique employed in parts of the tropics not yet visited. A special study has been initiated of timber house construction, with particular reference to the possibilities of improvement of native standards of housing in the tropics.

59. A number of enquiries with regard to tree felling and land clearing methods in the United Kingdom was dealt with, and a timber firm in Scotland was given advice on an extraction proposition involving the erection of a wire ropeway. Miscellaneous enquiries from forest officers numbered twenty-six.

### LIBRARY.

60. Books received and catalogued during the year numbered 57: pamphlets and bulletins 695. Sets of periodicals amount to 134, of which 106 are taken in currently. Borrowings, exclusive of literature consulted in the library, were 2,068, of which 138 were by readers outside the Department. External enquiries, involving the preparation of lists of literature on specific subjects, numbered 49.

61. A large part of the time of the library staff during the year was occupied with the preparation and publication of two works: an English translation of Flury's international system of decimal classification for forestry, and the first part of a Forestry Bibliography comprising all the references to pub-



lished material, other than books, collected by the Department up to the end of 1933. Material for further parts is ready for publication, and it is hoped to issue a second part early in 1937.

62. Acknowledgments for presentations of books and other literature to the library are due to Messrs. H. W. Chaundy, R. Bourne, H. S. Single, E. A. Strouts, Dr. Helen Bancroft, the Chief Conservator of Forests, Nigeria, Drs. G. Fox Wilson, E. A. Rudge and F. E. Clements, the Empire Forestry Association, Dr. Burt Davy, the Professor of Forestry, the Director of the Institute, Mr. J. Macdonald, the Indian Institute, the Bodleian Library, Mr. P. S. Spokes, Professor A. G. Tansley, the Forestry Departments of Italy, Latvia, Poland and Roumania, and the Agricultural and Forest Experiment Stations of Oklahoma, Utah, the Lake States and Iowa. A particularly useful and welcome gift was a set of over 300 English translations of forestry literature in a number of foreign languages received from the Division of Silvics, Forest Service, United States Department of Agriculture.

63. Acknowledgments are also due for assistance received from several other libraries, particularly the National Central Library and the Radcliffe Science Library. Regular exchange of material was begun with several institutions in Europe and America not hitherto on the exchange list.

#### DOCUMENTATION SECTION.

64. The action taken for resumption of the practice of scanning and indexing all incoming forestry literature has been referred to in paragraph 10 of this report, and the start made with the publication of bibliographical references up to the year 1933 has been described in the section dealing with the Library. The literature of the years 1934 and 1935 still remains to be dealt with, as it was considered advisable to get the new system working regularly on current literature before attempting to make up the arrears into which indexing work had fallen. A further consideration is that the important literature of these two years will be to a large extent covered by the scheme for the international exchange of bibliographical references launched by the *International Union of Forest Research Organizations*.

65. It is generally agreed, however, that bibliographical references do not go far enough, and that abstracts of important papers are an urgent requirement. If the project for a forestry bureau (paragraph 11) materializes, this work will be provided for; but it is hoped that in any case it will be greatly facilitated as the outcome of a proposal made on behalf of the

Institute to the Conference of the *I.U.F.R.O.* in August, 1936, for an international convention providing (a) that all important contributions to forestry literature should have a suitable author's summary appended to them, and (b) that copyright and translation rights in such summaries should be waived to enable them to be freely circulated throughout the world. The abstracting of scientific papers in present circumstances is apt to be a laborious and costly business, which should be much simplified and cheapened if 'ready-made' abstracts can be reproduced without formality by anyone interested in their circulation. Action has since been taken by the *I.U.F.R.O.* to invite support for this scheme.

66. Pending the development of systematic abstracting of world forestry literature, the *Current Monthly Record* (para. 10), containing as it does the titles, and, where these are insufficiently descriptive, a line or two explanatory of the subject, of all important contributions contained in incoming publications, is considered to provide a useful stopgap. Its circulation in the Empire is now about 240, of which 120 copies go to the Forestry Commission for use in district forest offices and 18 to the South African Forest Service. Each issue of the *C.M.R.* is cut up at the Institute, and individual items are pasted on cards to form two temporary indexes, by subject and author, from which permanent indexes will be compiled at suitable intervals. A simple subject index has recently been added to the *C.M.R.*, and its size has been reduced by elimination of the bulk of the references to reviews and abstracts previously included, which however are still recorded in the index and can be supplied in response to *ad hoc* enquiries. An arrangement has also been introduced whereby publications recorded in the *C.M.R.* can be supplied expeditiously to contributing Departments on their placing an order through the Librarian.

67. The work of organizing the Documentation Section was undertaken by Mr. P. S. Spokes, who was employed on a part-time basis during the year under report, but has since been engaged on full time, for a provisional period of two years from October, 1935, to carry on the duties of the section. These include, in addition to actual documentation work, the handling of all publications of the Institute that appear in multigraphed form. It is contemplated that the multigraph process will be increasingly used for papers of a specialized character for which a circulation large enough to justify the expense of printing is not to be expected; for interim reports on the results of research; and for publications like the *C.M.R.* and *Dendrological Notes* (paragraph 30) which are intended rather for current information than for permanent record. Part of a grant received from the Schlich Memorial Fund (see paragraph 7) was used

for the purchase of an electrically driven Gestetner Duplicator machine, and a satisfactory technique for preparing stencils of line drawings, maps and diagrams has been devised by the Institute Draftsman.

68. With the approval and help of the Colonial Office, a beginning was made with a scheme suggested at the Empire Forestry Conference in South Africa, whereby the Forest Department of each Colonial territory contributes half-yearly a brief news letter summarizing recent progress made, particularly in the technical field. The news letters are assembled at the Institute and issued in the form of a multigraphed *News Bulletin*, thus enabling the territories to keep in touch with the latest developments in Colonial forestry practice. The system promises to be most useful in this way, and in keeping the Institute similarly informed of what is going on overseas, and it is hoped that it may be possible gradually to extend it to forestry departments and organizations in other parts of the Empire. The *News Bulletin* is intended only for departmental use, and does not constitute a publication.

69. The possibilities of microphotographic reproduction of documents on 35 mm. cinema film were studied during the year in consultation with the Photographic Section, and, while funds are not at present available for the purchase of the requisite apparatus, it is hoped to develop this method later on. The evolution of a satisfactory viewing device for direct reading of an image enlarged from 35 mm. film would greatly enhance the usefulness of the method, and a well-known firm engaged in the manufacture of photographic apparatus is experimenting in consultation with the Institute with this end in view. It is, of course, possible to produce directly readable enlargements on paper from the film negative, but it would be cheaper and more convenient if miniature copies of documents in film positive form, capable of being read in a 'viewer,' could be sent about by ordinary post or air mail.

#### FINANCE.

70. The audited accounts of the Institute will appear as usual in the *Oxford University Gazette*. An analysis of receipts and payments, designed particularly to show the distribution of expenditure among the various sections and activities of the Institute, will be found in Appendix II. The figures in this statement have been approximated to the nearest pound. The year opened with a deficit of £290 and closed with a surplus of £251, and actual expenditure, exclusive of these balances, was £10,263 as against £9,386 in the previous year. Total receipts

were £10,804 as against £10,121 in 1934-35. Grants from the Colonies, the Forestry Commission and India increased by £281, £124 and £333 respectively : there was a temporary decrease of £100, since restored, in grants from the Dominions.

71. The accumulations in the Information Branch Account were drawn upon to the extent of £595 for the organization of the Documentation Section. From 1936-37 onwards the expenditure on this section will be carried on General Account and the Information Branch Account will be closed.

72. The 'grants in advance placed temporarily on deposit' in Capital Account are certain annual contributions paid in advance of the years to which they relate.

#### ADMINISTRATION AND GENERAL.

73. A list of the staff at the close of the year is given in Appendix I. Professor Troup held the post of Director until December 31st, 1935, and was succeeded by Mr. J. N. Oliphant as from January 1st, 1936.

74. Both the Professor and Mr. Oliphant attended the Fourth Empire Forestry Conference, 1935, in South Africa, the latter representing the forest organizations of British Malaya. On the homeward journey Mr. Oliphant spent about a month studying forest conditions in West Africa.

75. Professor Troup visited Tanganyika Territory in July and August to advise the Government on forest policy, and particulars of his report are given in Appendix III, Publications.

76. The Director wishes to thank Professor Troup and the staff of the Institute for their co-operation, and for much valuable advice on current work and future plans.

J. N. OLIPHANT,

*Director*

(on behalf of the Committee for the Imperial  
Forestry Institute).

OXFORD.

*January 19th, 1937.*



## APPENDIX I.

## LIST OF STAFF.

## I. STAFF ENGAGED IN INSTRUCTION AND RESEARCH.

- \*Professor R. S. TROUP, C.M.G., C.I.E., M.A., D.Sc. (Oxon.), F.R.S.,  
Fellow of St. John's College. Silviculture.  
Mr. J. N. OLIPHANT, M.A. (Oxon.), Christ Church (*Director*). Tropical  
forest economics and policy.  
†Dr. BURTT DAVY, M.A. (Oxon.), Ph.D. (Cantab.), University College.  
Forest botany and ecology.  
Mr. A. C. HOYLE, B.Sc., M.A. (Oxon.), Pembroke College. Forest botany  
and ecology.  
†Dr. L. CHALK, M.A., D.Phil. (Oxon.), University College. Wood struc-  
ture and properties.  
Miss M. M. CHATTAWAY, B.Sc., M.A. (Oxon.), St. Hugh's College. Wood  
structure and properties.  
†Mr. W. R. DAY, B.Sc., M.A. (Oxon.), Exeter College. Pathology, forest  
hygiene, silviculture.  
†Dr. R. N. CHRYSTAL, D.Sc. (Edin.), Hon. M.A. (Oxon.). Forest zoology.  
\*†Mr. R. BOURNE, M.A. (Oxon.), Trinity College. Forest management :  
regional and air survey.  
\*†Mr. A. H. LLOYD, M.C., M.A. (Oxon.), Exeter College. Forest engineer-  
ing and utilization.

## II. STAFF ENGAGED SOLELY IN RESEARCH FOR THE FORESTRY COMMISSION.

- Mr. T. R. PEACE, M.A. (Cantab.). Mycology.  
Mr. J. M. B. BROWN, B.Sc. (Belfast). Entomology.  
Mr. R. G. SANZEN-BAKER, B.Sc. (Edin.), *Forestry Commission Research  
Officer for England and Wales*. Silviculture.

III. STAFF OF OTHER UNIVERSITY DEPARTMENTS ASSISTING IN  
INSTRUCTIONAL WORK.

- Professor A. G. TANSLEY, M.A. (Oxon.), F.R.S., Sherardian Professor of  
Botany, Fellow of Magdalen College. Ecology.  
Mr. C. G. T. MORISON, M.A. (Oxon.), University Reader in Soil Science,  
Student of Christ Church. Soil Science.  
Mr. G. R. CLARKE, B.Sc., M.A., Lecturer in Soil Science, Department of  
Rural Economy, Oriel College. Soil Science.  
Mr. H. S. WILLIAMSON, M.A. (Oxon.), Christ Church. Forest law and  
land tenure.

## IV. OTHER STAFF.

- Documentation Section*: Mr. P. S. SPOKES, B.Sc., M.A. (Oxon.). The  
Queen's College.  
*Secretary*: Miss K. ALLISON-BROWN, B.A. (Oxon.). Society  
of Oxford Home Students.  
*Librarian*: Miss G. GUINEY.  
*Accountant*: Mr. F. E. BALMAN.

\*The Institute is responsible for approximately 18, 19 and 52 per cent.  
respectively of the salaries and contingent superannuation fund contributions  
of Professor Troup, Mr. Bourne and Mr. Lloyd.

† These members of the staff have the status of University Demonstrators,  
having been reappointed as such with effect from the following dates :—Dr.  
Burtt Davy, 1.10.33, Mr. Lloyd, 1.10.34, the remainder 1.10.36.

## APPENDIX II.

## IMPERIAL FORESTRY INSTITUTE, 1935-36.

## GENERAL ACCOUNT.

RECEIPTS.		PAYMENTS.	
	£		£
Grants from :—		Deficit, July 31, 1935, brought forward ... ..	290
Forestry Commission ... ..	3,337	Administration ... ..	1,815
Colonies ... ..	5,000	Botany ... ..	1,844
Dominions ... ..	450	Drawing Office ... ..	194
Indian Provinces ... ..	1,000	Engineering ... ..	661
Sudan ... ..	50	Entomology ... ..	676
Dept. Sc. Indus. Research ... ..	150	Forest Management ... ..	303
Schlich Memorial Fund ... ..	130	Library ... ..	334
Sale of publications ... ..	154	Mycology ... ..	860
Photographs and slides ... ..	29	Photographic ... ..	161
Interest on deposits held by Capital and Information Branch Accounts ... ..	504	Publications ... ..	426
		Silviculture ... ..	242
		Silvicultural Research ... ..	40
		Tours and fees ... ..	95
		Wood structure ... ..	1,143
		Forestry Commission :—	
		Mycology ... ..	903
		Entomology ... ..	516
		Repayment of Mortgage, <i>infra</i> Surplus, July 31, 1936, carried forward ... ..	50
			251
	<u>£10,804</u>		<u>£10,804</u>

## INFORMATION BRANCH ACCOUNT.

	£		£
Balance, July 31, 1935, brought forward ... ..	673	Expenditure ... ..	595
		Balance July 31, 1936, carried forward ... ..	78
	<u>£673</u>		<u>£673</u>

## CAPITAL ACCOUNT.

	£		£
Balance July 31, 1935, brought forward ... ..	24,431*	Balance July 31, 1936, carried forward ... ..	26,207
Grants in advance placed temporarily on deposit ... ..	1,726		
Repayment of mortgage from General Account, <i>supra</i> ... ..	50		
	<u>£26,207</u>		<u>£26,207</u>

\* £900 were drawn from Capital Account in 1931-32 to pay off mortgages on premises at 6 Keble Road and 18 Museum Road, and this sum is being repaid from General Account in yearly instalments of £50.

## APPENDIX III.

## PUBLICATIONS.

The following publications have appeared during the year :

BANCROFT, H. Material of *Marquesia acuminata* from Northern Rhodesia. (*Kew Bulletin*, 1935).

Studies in floral anatomy. II. The floral anatomy of *Glaucium flavum* with reference to other members of the *Papaveraceae*. (*Journal of the Linnean Society (Botany)*, Vol. 50, 1935).

The wood-anatomy of representative members of the *Monotoideae*. (*American Journal of Botany*, Vol. 22, 1935).

Studies in floral anatomy. III. An interpretation of the Gynaeceum of the *Primulaceae*. (*Idem*, Vol. 23, 1935).

On the production of epicormic shoots in Plane trees. (*Gardeners' Chronicle*, Vol. 99, 1936).

Elm notes for 1935. 2 articles. (*Idem*, Vol. 99, 1936).

New Angolan species of *Monotes*. (*Boletim da Sociedade Broteriana*, Coimbra, 1936).

BURTT DAVY, J. A sketch of the forest vegetation and flora of tropical Africa. (*Empire Forestry Journal*, Vol. 14, 1935).

The stability of tree names. (*Idem*, Vol. 14, 1935; *Forestry*, Vol. 9, 1935; *Quarterly Journal of Forestry*, Vol. 30, 1936; *Scottish Forestry Journal*, Vol. 50, 1936; *Tropical Woods*, No. 45, 1936).

New or noteworthy South African plants. VII. (*Kew Bulletin*, 1935.)

New or noteworthy South African plants. VIII, and

New *Compositae* from the Transvaal, with J. Hutchinson. (*Idem*, 1936).

New *Compositae* from the Transvaal. (*Journal of South African Botany*, 1935).

BURTT DAVY, J., CHRYSTAL, R. N., and DAY, W. R. The cultivation of the Cricket-bat Willow. (*Forestry Commission Bulletin*, No. 17, 1936).

CHATTAWAY, M. M. Relation between fibre and cambial initial length in dicotyledonous woods. (*Tropical Woods*, No. 46, 1936).

CHRYSTAL, R. N. (Ed.). Studies on the Pine Shoot Moth (*Evetria buoliana* Schiff.). Part 1, by C. C. Brooks; Part 2; by J. M. B. Brown. (*Forestry Commission Bulletin*, No. 16, 1936).

CLARKE, G. R. The study of the soil in the field. (Institute publication).

DAY, W. R. Some aspects of forest pathology in Great Britain. (*British Empire Forestry Conference*, 1935).

OLIPHANT, J. N. The extraction of timber under tropical conditions. (*British Empire Forestry Conference*, 1935).

The planning of forest production in some tropical Colonies. (*The Malayan Forester*, Vol. 5, No. 1).  
 PEACE, T. R. Destructive fairy rings associated with *Paxillus giganteus* in young Pine plantations. (*Forestry*, Vol. 70, 1936).

Spraying against *Meria laricis*, the Leaf Cast Disease of Larch. (*Idem*, Vol. 10, 1936).

TROUP, R. S. Report on forestry in Tanganyika Territory. (Government Printer, Dar es Salaam, 1936).

English translation of 'Forest Bibliography with the Index number 634.9.F': an international decimal classification issued by the International Union of Forest Research Organizations. (Institute publication).

Forest Bibliography to 31st December, 1933, Part I. A, General Forestry; B 1, Silviculture General; B 2, Seed and Seedlings. (Institute publication).

## APPENDIX IV.

### BOTANICAL IDENTIFICATIONS, 1935-36.

Belgian Congo*	...	...	...	...	...	4
Gambia	...	...	...	...	...	123
Gold Coast	...	...	...	...	...	338
Nigeria	...	...	...	...	...	231
Sierra Leone	...	...	...	...	...	66
Uganda	...	...	...	...	...	6
Kenya Colony	...	...	...	...	...	239
Tanganyika Territory	...	...	...	...	...	228
Nyasaland	...	...	...	...	...	174
Northern Rhodesia	...	...	...	...	...	100
Southern Rhodesia	...	...	...	...	...	276
South Africa	...	...	...	...	...	36
St. Helena	...	...	...	...	...	45
Zanzibar	...	...	...	...	...	56
Cyprus	...	...	...	...	...	1
Fiji Islands	...	...	...	...	...	1
India	...	...	...	...	...	2
British Honduras	...	...	...	...	...	1
Trinidad	...	...	...	...	...	16
Forest Products Research Laboratory, Princes Risborough	...	...	...	...	...	401
Imperial Forestry Institute staff and various correspondents	...	...	...	...	...	216
						<hr/> 2,560 <hr/>

\* Material loaned to the Institute for assistance in the work of the Botany Section.



## APPENDIX V.

## SPECIMENS RECEIVED, 1935-36.

## HERBARIUM.

EUROPE. *The British Isles*: Various correspondents, 113; The Forest Products Research Laboratory, Princes Risborough, 296; Dr. J. Burtt Davy, 254; Dr. L. Chalk, 5; Miss M. M. Chattaway, 1; Mr. J. Macdonald, 176; Mr. T. R. Peace, 9; Mr. F. Jones, 1; Mr. P. G. Beak, 12. *France*: M. Dufrenoy, 2. *Germany*: Dr. H. Harms, 1. *Holland*: Mr. T. R. Peace, 17. *Sweden*: Dr. E. Asplund, 120.

ASIA. *British North Borneo*: The Conservator of Forests, per The Director, Royal Botanic Gardens, Kew, 243. *Fiji Islands*: Dr. A. C. Smith, per Prof. S. J. Record, School of Forestry, Yale University, U.S.A., 1. *Hong Kong*: Through the Forest Products Research Laboratory, Princes Risborough, 3. *Malaya*: The Director, Botanic Gardens, Singapore, 143. *Sarawak*: Through the Forest Products Research Laboratory, Princes Risborough, 74.

AFRICA. *Belgian Congo*: Professor Dr. W. Robyns, Director, Jardin Botanique de l'Etat, Brussels, 708. *Gambia*: Mr. D. R. Rosevear, 145. *Gold Coast*: The Conservator of Forests, Accra, through Mr. A. J. Cox, 35; Mr. C. Vigne, 210; Mr. G. W. St. Clair Thompson, 6; Dr. F. R. Irvine, Achimota College, Accra, 56. *Kenya Colony*: The Conservator of Forests, Nairobi, through Mr. S. H. Wimbush, 93. *Nigeria*: Mr. R. Catterall, 4; Mr. J. D. Kennedy, 350. *Nyasaland*: The Conservator of Forests, Zomba, 63; Mr. R. G. Ross Townsend, 7. *Northern Rhodesia*: Mr. J. B. Clements, Zomba, Nyasaland, 5; Mr. R. G. Miller, Lusaka, 67. *Southern Rhodesia*: Mr. R. H. Finlay, 2; Mr. A. A. Pardy, 51. *Sierra Leone*: The Conservator of Forests, Freetown, through Mr. T. E. Edwars, 83; through Mr. C. V. Wallace, 21. *Tanganyika Territory*: The Conservator of Forests, Morogoro, 112; Mr. C. J. W. Pitt Schenkel, 27; Prof. R. S. Troup, 6; Mr. B. D. Burtt, through Prof. R. S. Troup, 5; Mr. P. J. Greenway, 358; Mr. H. J. A. Rea, 56. *Uganda*: The Conservator of Forests, Entebbe, 103. *Union of South Africa*: The National Herbarium, Pretoria, 51; Mr. F. R. Long, Port Elizabeth, 7; Mrs. A. B. Gillett, 302 Banbury Road, Oxford, 11. *St. Helena*: Mr. K. E. Toms, 10. *Zanzibar*: Mrs. J. H. Vaughan, 1.

AMERICA. *United States*: The Director, Field Museum of Natural History, Chicago, 343; The New York State College

of Forestry, Syracuse, 39; Miss F. Bolton, California, 3. *Tropical America*: The School of Forestry, Yale University, 166. *Mexico*: Mr. G. B. Hinton, 4. *British Guiana*: The Conservator of Forests, Mazaruni, through Mr. W. J. Lockie, 1. *Trinidad*: The Conservator of Forests, Port-of-Spain, 74; The Director of Agriculture, Port-of-Spain, 6.

#### WOOD COLLECTION.

##### (i) Hand specimens for type collection:—

EUROPE. *The British Isles*: The Forestry Commission, through Mr. J. Macdonald, 10; through Mr. J. E. Maund, 7; The Forest Products Research Laboratory, Princes Risborough, 2; Dr. J. Burt Davy, 9; James Latham & Co., through Mr. T. J. Price (various); Mr. J. Macdonald, 18; Mr. C. G. T. Morison, 6; Miss A. M. Rogers, 1; Sir W. Wright Smith, Royal Botanic Garden, Edinburgh, 1; Prof. R. S. Troup, 2; E. Whitmore & Co., 2. *Silesia*: Mr. Fraser Story, 1.

ASIA. *British N. Borneo*: The Conservator of Forests, 1. *Burma*: Through the Forest Products Research Laboratory, Princes Risborough, 2. *Hong Kong*: Ditto, 3. *Korea*: Prof. N. Yamabayashi, 26. *Sarawak*: Through the Forest Products Research Laboratory, Princes Risborough, 13. *Straits Settlements*: The Director, Botanic Gardens, Singapore, 2.

AFRICA. *Belgian Congo*: Dr. Fl. Duchesne, 2; through Major J. R. Cosgrove, 1. *Gold Coast*: The Conservator of Forests, through Mr. C. Vigne, 3. *Kenya*: The Conservator of Forests, 51. *Nigeria*: Through the Forest Products Research Laboratory, Princes Risborough, 1. *St. Helena*: Mr. K. E. Toms, 1. *South Africa*: Prof. R. S. Troup, 2.

AMERICA. *Argentine*: Dir.-General de Tierras, Buenos Aires, 3; through Prof. S. J. Record, 27. *Brazil*: Mr. Charles Goulter, 10. *U.S.A.*: Prof. S. J. Record, Yale School of Forestry (various countries), 220; Mr. C. Robinson, 46; Mr. E. W. Carls, 34; through the Forest Products Research Laboratory, Princes Risborough, 1.

OCEANIA. *Australia*: C.S.I.R., Div. For. Prod., through Mr. H. E. Dadswell, 68.

(ii) Planks. James Webster & Co. Ltd., 3, and Messrs. Gillies & Co., 1, through Major J. R. Cosgrove. The School of Rural Economy, Oxford, 9. New South Wales Government Offices, London, 33.

## APPENDIX VI.

## HERBARIUM EXCHANGES, 1935-36.

	<i>Duplicates Despatched.</i>	<i>Duplicates Received.</i>
Aberdeen University (Professor J. R. Matthews, Department of Botany)	600	—
Arnold Arboretum (Dr. A. Rehder) ...	784	—
British Museum (Mr. J. Ramsbottom)	601	—
Brussels, Jardin Botanique de l'Etat (Professor Dr. W. Robyns) ...	547	708
Chicago, Field Museum of Natural History (Dr. S. C. Simms) ...	496	343
Ceylon, Department of Agriculture (The Systematic Botanist) ...	165	—
Dehra Dun, Forest Research Institute and College (The Forest Botanist)	251	—
Edinburgh, Royal Botanic Gardens (Prof. Sir William Wright Smith)	1,520	—
Germany, Botanisches Museum, Berlin- Dahlem (Dr. R. Pilger) ...	355	—
Hull, University College (Professor R. D'O. Good) ...	770	—
Kew, Royal Botanic Gardens (Sir Arthur W. Hill) ...	155	243
New York, Botanic Gardens, Bronx Park (Dr. M. A. Howe) ...	615	—
New York State College of Forestry, Syracuse (Professor H. P. Brown)	604	39
Pretoria, Division of Botany, Depart- ment of Agriculture (Dr. I. B. Pole Evans) ...	530	51
Singapore, Botanic Gardens (Mr. R. E. Holtum) ...	145	143
Sweden, Naturhistoriska Riksmuseet, (Dr. E. Asplund) ...	120	180
Tanganyika Territory, East African Agricultural Research Station (Mr. P. J. Greenway) ...	170	358
Washington, The Smithsonian Institu- tion (Dr. W. R. Maxon) ...	605	—
Wales, University College of North Wales (Professor D. Thoday) ...	840	—
Yale University, School of Forestry, (Professor S. J. Record) ...	605	166
	<hr/> 10,478 <hr/>	<hr/> 2,231 <hr/>

## PROSPECTUS.

*Scope of Work.* The Institute provides courses of advanced study; its work comprises (1) post-graduate training of probationers for the forest services and other qualified persons, (2) training of research officers in special subjects, and (3) courses for selected officers already serving.

The Institute does not undertake to provide a general training in Forestry such as is given at Universities or other centres where this subject is taught.

*Admission of Students.* Only persons falling within one or other of the following categories are eligible for admission to the Institute:—

- (a) Those possessing a Degree in Forestry or a Diploma or equivalent certificate of having satisfactorily completed an approved course of training in Forestry, who have been selected as probationers for the higher branch of some forest service;
- (b) Graduates with honours in Science who desire to become specialists in some branch of work connected with Forestry;
- (c) Forest officers deputed by their Governments to attend courses with the view of bringing their professional knowledge up to date;
- (d) Students of approved qualifications not included in the first three categories who are admitted on the recommendation of Overseas Governments;
- (e) Students with a University training in Forestry who may wish to attend the Institute on their own account and at their own expense.

*Note.*—(1) No officer in any Public Service in the British Empire will be admitted to the Institute unless he is officially deputed by the Government under which he is serving; no application from any such officer will be considered unless it is submitted through and approved by the Head of his Department; (2) The Institute reserves the right to refuse the admission of applicants other than nominees of contributing Departments and Governments.

*Names of applicants for admission should be sent, together with details of previous training and subjects which it is proposed to study, to the Director, Imperial Forestry Institute, Oxford, at least three months before the date on which it is proposed to join: the Director cannot undertake to consider applications received at shorter notice.*



*Terms and Vacations.* The academic year begins early in October, and is divided into the following Terms and Vacations:

Michaelmas Term (eight weeks, early October to early December).

Christmas Vacation (early December to middle of January).

Hilary Term (eight weeks, middle of January to middle of March).

Easter Vacation (middle of March to end of April).

Trinity Term (eight weeks, end of April to end of June).

Long Vacation (early July to early October).

*Courses of Study.* Instructional facilities are being enlarged, but the position is not yet sufficiently stabilized to allow of complete revision of the particulars given below. Those desiring fuller information on refresher courses should write to the Director indicating in general terms the lines of study in which they are interested. Lecture courses on Statistical Methods in Silviculture Research (Hilary Term), Forest Hygiene (Trinity Term), and Forest Entomology (Hilary Term) have been added since the last revision of the prospectus, and a course on Soils is being arranged with the Soil Science Laboratory for Trinity Term. For a general account of the studies being undertaken by the Institute reference is invited to the Annual Report for 1935-36.

The courses of study are normally of three kinds :—

- (1) For post-graduate probationers who have not yet taken up their appointments: the course ordinarily extends over one academic year, beginning October, and including practical work in part of the Easter and Long Vacations.
- (2) For forest officers on leave, or others who propose to attend the Institute with the view of spending some time (normally one year) in specializing in some particular branch of work; the course of study will be adapted to individual needs, and will ordinarily begin in October.
- (3) For forest officers on leave who propose to spend only part of the year on 'refresher' courses. *These should attend during the spring and summer months, and not between October and January.* The distribution of work in the more usual subjects studied in 'refresher' courses is as follows :—

*Silvicultural Systems:* Trinity Term, with Continental tours in Easter and Long Vacations (middle of March to middle of September).

*Methods of Artificial Regeneration:* Hilary and part of Trinity Terms and Easter Vacation (middle of January to end of May).

*Forest Management, Regional Survey, Stocktaking and Working Plans:* Easter Vacation, Trinity Term and Long Vacation (middle of March to middle of August).

*Tropical Silviculture:* Trinity Term (end of April to end of June).

*Surveying:* Trinity Term (end of April to end of June).

*Forest Utilization and Engineering:* (1) Special work in timber mechanics and wood seasoning and preservation at the Forest Products Research Laboratory, Princes Risborough, can be arranged at any time throughout the year.

(2) *Road Project:* Trinity Term (end of April to end of June).

*Systematic Botany:* (1) *Full course:* three Terms (middle of October to end of June).

(2) *Short courses:* (a) two Terms—Hilary and Trinity (middle of January to end of June); or (b) one Term, Hilary or Trinity.

*Continental Tours:* Easter and Long Vacations.

Persons wishing to join Continental tours are reminded that their visits should coincide with the normal tours arranged in the Easter and Long Vacations (*i.e.* the middle of March to the end of April, and early July to early October). Neither the Institute nor any member of its staff is authorized to arrange visits or to furnish introductions on behalf of persons desiring to visit Continental centres on their own account.

*Subjects of a more special kind*, such as Entomology, Mycology, Wood Structure, Methods of Ecological Survey, Soil Properties, etc., can be studied at times to be arranged to suit individual requirements, provided notice of not less than three months is given.

*Fees.* An inclusive fee of £150 will be charged for instruction for one whole year at the Institute. If the course of studies extends over less than one year, the fees charged will be £50 per Term and £2 per week for tours in the Vacations. These fees will include all charges for instruction both at Oxford and on tour, as well as for the use of apparatus, materials, library, etc.; they will not include living and travelling expenses. Reduced fees may be charged in individual cases, at the discretion of the Director, to students attending the Institute at their own expense who do not belong to any Public Service.

No fees will be charged to students deputed by Governments and Departments which contribute to the funds of the Institute.

*Expenses.* Living expenses at Oxford during Term are roughly estimated at from £3 10s. to £4 10s. a week. Expenses on the Continent vary considerably with locality and other factors.

*Membership of the University.* Students of the Institute may, at their own discretion and if possessed of the necessary qualifications, be matriculated as members of the University; particulars regarding admission, expenses, etc., are given in a pamphlet entitled *General Information concerning Admission, Residence, etc.*, obtainable (post free 6½d.) at the Clarendon Press Depot, High Street, Oxford. Students becoming members of the University will be eligible for the Diploma in Forestry on fulfilling the conditions laid down by the University Statutes.

## PUBLICATIONS ISSUED BY THE IMPERIAL FORESTRY INSTITUTE.

### OXFORD FORESTRY MEMOIRS.

1. The Relation between Height Growth of Trees and Meteorological Conditions. By W. E. Hiley and Norman Cunliffe. 1922. 3s. 6d.
2. Soil Acidity and its Relation to the Production of Nitrate and Ammonia in Woodland Soils. By G. R. Clarke. 1924. 3s. 6d.
3. The Watermark Disease of the Cricket-bat Willow (*Salix caerulea*). By W. R. Day. 1924. 3s. 6d.
4. Measurements of the Cubical Contents of Forest Crops. By M. D. Chaturvedi. 1926. 10s. 6d.
5. The Physiography of Southern Nigeria and its Effect on the Forest Flora of the Country. By J. R. Ainslie. 1926. 4s. 0d.
6. The Financial Return from the Cultivation of Scots and Corsican Pines. By W. E. Hiley. 1926. 3s. 6d.
7. The Gold Coast Forest: A Study in Synecology. By T. F. Chipp. 1927. 10s. 0d.
8. The Forest Industry of Finland. By W. E. Hiley. 1928. 4s. 6d.
9. Aerial Survey in Relation to the economic Development of new Countries, with special Reference to an Investigation carried out in Northern Rhodesia. By R. Bourne. 1928. 7s. 6d.
10. Formation of Spring and Summer Wood in Ash and Douglas Fir. By L. Chalk. 1930. 6s. 0d.

11. Studies of the Sirex Parasites. By R. N. Chrystal. 1930. 5s. *od.*
12. The Plasticity of the Root System of Corsican Pine in early Life : Researches designed to facilitate the Establishment of this Tree in Great Britain. By R. N. Aldrich-Blake. 1930. 6s. *od.*
13. Regional Survey and its Relation to Stocktaking of the Agricultural and Forest Resources of the British Empire. By R. Bourne. 1931. 15s. *od.*
14. The Fixation of atmospheric Nitrogen by Bacteria living symbiotically in Root Nodules of *Casuarina equisetifolia*. By R. N. Aldrich-Blake. 1932. 3s. 6d.
15. *Meria laricis*, the Leaf-Cast Disease of Larch. By T. R. Peace and C. H. Holmes. 1933. 4s. *od.*
16. The Experimental Production and the Diagnosis of Frost Injury on Forest Trees. By W. R. Day and T. R. Peace. 1934. 6s. *od.*
17. The Physiography and Vegetation of Trinidad and Tobago. A Study in Plant Ecology. By R. C. Marshall. 1934. 6s. *od.*
18. The Silviculture of the Mixed Deciduous Forests of Nigeria. By W. D. MacGregor. 1934. 15s. *od.*
19. The Use and Misuse of Land. By R. MacLagan Gorrie. 1935. 6s.

#### OXFORD MANUALS OF FORESTRY.

Silvicultural Systems. By R. S. Troup. 1928. 21s.

The Economics of Forestry. By W. E. Hiley. 1930. 21s.

#### FOREST TREES AND TIMBERS OF THE BRITISH EMPIRE.

1. Some East African Coniferae and Leguminosae. By L. Chalk, J. Burtt Davy and H. E. Desch. 1931. 5s.
2. Twenty West African Timber Trees. By L. Chalk, J. Burtt Davy, H. E. Desch and A. C. Hoyle. 1933. 7s. 6d.
3. Fifteen South African High Forest Timber Trees. By J. Burtt Davy, L. Chalk, M. M. Chattaway, F. S. Laughton and M. H. Scott. 1935. 7s. 6d.

#### CHECK-LISTS OF THE FOREST TREES AND TIMBERS OF THE BRITISH EMPIRE.

1. Uganda Protectorate. By J. Burtt Davy and F. Bolton, with the collaboration of N. V. Brasnett, W. J. Eggeling and C. M. Harris. 1935. 5s.



2. Nyasaland Protectorate. By J. Burt Davy, J. B. Clements, P. Topham and R. C. Ross Townsend. 1936. (To be obtained from the Conservator of Forests, Zomba, Nyasaland).

#### MISCELLANEOUS.

- The Silviculture of Indian Trees. By R. S. Troup. 1921. 3 volumes. 105s.
- A Manual of the Flowering Plants and Ferns of the Transvaal, with Swaziland, South Africa. By J. Burt Davy. Part I, 1926. 15s. Part II, 1932. 25s.
- Handbook of Conifers grown in the Arboretum, Bagley Wood, Oxford. By J. Burt Davy. 1926. 2s.
- Collection and Preparation of Herbarium and Timber Specimens. By J. Burt Davy and L. Chalk. 1928. 8d.
- Engineering for Forest Rangers in Tropical Countries, with special reference to Burma. By A. H. Lloyd. 1929. 17s. 6d.
- British Hardwoods: their Structure and Identification. By L. Chalk and B. J. Rendle. 1929. (Issued by the Forest Products Research Laboratory, Princes Risborough, as Forest Products Research Bulletin No. 3). 5s.
- Exotic Forest Trees in the British Empire. By R. S. Troup. 1932. 20s.
- Natural Woodlands of Britain and Ireland. By M. L. Anderson. 1932. 9d.
- International Classification System for Forest Bibliography with the Index Number 634.9 F. International Union of Forest Research Organizations. English translation. 1936. 6s.
- Forest Bibliography to 31st December, 1933. Part I (1, General Silviculture, and 2, Seed and Seedlings). 1936. 5s. Part II (3, Natural Reproduction; 4, Artificial Reproduction; 5, Tending; 6, Silvicultural Systems; 7, Notes on Trees). In the Press.
- The Study of the Soil in the Field. By G. R. Clarke. 1936. 5s.
- Insects of the British Woodlands. By R. N. Chrystal. 7s. 6d. In the Press.









